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REMARKS/ARGUMENTS

Claims 12-13 and 15-18 and 28-29 are pending. No claims have been amended or canceled.

In the office action mailed June 4, 2003 including final rejection, the Examiner rejected the pending claims as obvious under 35 U.S.C. 103 in view of U.S. patent no. 6,302,965 to Umotoy et al. ("the Umotoy patent") considered in light of the U.S. patent application no. 2002/00000196 to Park ("the Park Application"). These claim rejections are traversed as follows.

The Umotoy patent issued on October 16, 2001, less than one year prior to the January 25, 2002 filing date of the instant application. In a previous office action, the Examiner cited the Umotoy patent as prior art under 35 U.S.C. 102(e).

In response, Applicants submitted proof of common ownership of the instant application and the Umotoy patent, thereby overcoming the rejection under 35 U.S.C. 102(e)/103.

In the current office action, the Examiner has again rejected the pending claims as obvious under 35 U.S.C. 103 in view of the Umotoy patent, this time citing the Umotoy patent as prior art under 35 U.S.C. 102(a). The effective date of the Umotoy patent as prior art under 35 U.S.C. 102(a) is October 16, 2001, its date of publication.

Filed herewith, please find the declaration under 37 C.F.R. 1.131 of Nitin Ingle, co-inventor of the instant application. Mr. Ingle's declaration, and the Exhibit attached thereto, evidence that the subject matter of the pending claims was invented prior to October 16, 2001, the effective priority date of the Umotoy patent under 35 U.S.C. 102(a).

In view of the accompanying declaration, it is respectfully asserted that the Umotoy patent is not available as a prior art reference, and the rejection of the pending claims in light of the Umotoy patent has been overcome.

The Examiner has also rejected the pending claims as obvious under 35 U.S.C. 103 in view of U.S. patent no. 6,586,886 to Katz et al., ("the Katz patent"), U.S. patent application publication no. 2003/0111961 ("the first published Katz application"), or U.S. patent application publication no. 2003/0201723 ("the second published Katz application"), considered in light of the Park Application. These claim rejections are traversed as follows.

The Examiner has explicitly cited the Katz patent, the first published Katz application, and the second published Katz application, as prior art under 35 U.S.C. 102(e). As

indicated by the Examiner, 35 U.S.C. 103(c) precludes an obviousness rejection from being based upon 102(e) prior art that is commonly owned with the application.

The first published Katz application ultimately issued as the Katz patent, and the second published Katz application is a continuation of the first published Katz application. Accordingly, attached hereto is a copy of the recorded assignment of the first published Katz application to Applied Materials, Inc. A copy of the assignment of the instant application to Applied Materials, Inc. has previously been submitted and is already of record.

Based upon the status of the Katz references as prior art under 35 U.S.C. 102(e), and common ownership between these references and the instant application, it is understood that these references are not eligible prior art for an obviousness rejection of the pending claims. Accordingly, it is respectfully asserted that continued rejection of the pending claims as obvious based upon these references is improper, and these claim rejections should be withdrawn.

In view of the foregoing, Applicants believe all claims now pending in this Application are in condition for allowance and an action to that end is urged. If the Examiner believes a telephone conference would expedite prosecution of this application, please telephone the undersigned at 650-326-2400.

Respectfully submitted,



Kent J. Tobin
Reg. No. 39,496

TOWNSEND and TOWNSEND and CREW LLP
Tel: 650-326-2400
Fax: 650-326-2422
KJT:km
60134823 v1



IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

In re application of:

KARTHIK JANAKIRAMAN et al.

Application No.: 10/057,280

Filed: January 25, 2002

For: GAS DISTRIBUTION
SHOWERHEAD

Customer No.: 20350

Confirmation No. 1879

Examiner: Jeffrie Robert Lund

Technology Center/Art Unit: 1879

DECLARATION UNDER 37 C.F.R. 1.131
OF NITIN INGLE

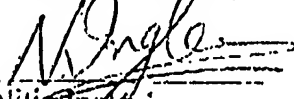
Commissioner for Patents
P.O. Box 1450
Alexandria, VA 22313-1450

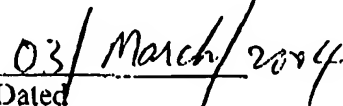
Sir:

I am a co-inventor of the above-referenced patent application.

Attached hereto as an Exhibit are eight pages of a power point presentation created by me prior to October 16, 2001. These pages evidence invention of subject matter of pending claims of the above-referenced patent application, prior to October 16, 2001.

I hereby declare that all statements made herein of my own knowledge are true, and that these statements were made with the knowledge that willful false statements and the like so made are punishable by fine or imprisonment, or both, under Section 1001 of Title 18 of the United States Code, and that such willful false statements may jeopardize the validity of the application or any patent issued thereon.


Nitin Ingle


Dated

999 W. Hamilton Ave #97
Campbell, CA 95008
60135054 v1

HT-USG at Very Low Spacing

Development of USG Process and Hardware
for
Very Low Spacings
to increase
Deposition Rate & Throughput

Nitin Ingle
Karthik Janakiraman

CONFIDENTIAL

Outline

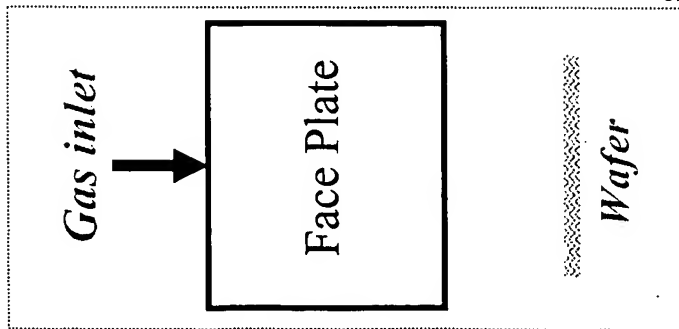
Exhibit
Page 2 of 8

- **Goal - To Improve Dep Rate & Throughput**
- **Path - Reduce Spacing between Wafer and Face Plate**
- **Known Problems**
 - 1. Accuracy of gap measurements (do not destroy the heater)
 - *Toan Tran and Duc Tang calibrated the spacing*
 - 2. Streaks on the wafer at low spacings (known problem at 150 mils)
 - 3. Point defects (very high localized dep rate) at very low spacing
 - 4. Thick edges (effect of fluid dynamics)
 - *CFD by Core Technology Group*

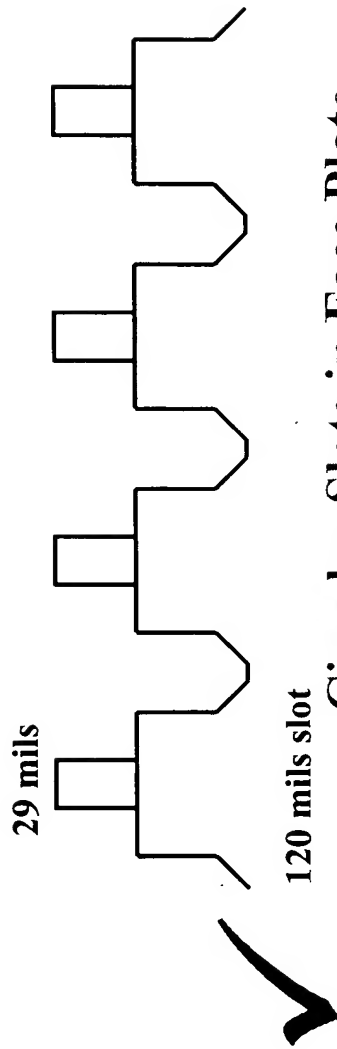
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Hardware Development

Sequence of Faceplate Hole Modification



62 mils	29 mils	29 mils	29 mils	122 mils	
29 mils	62 mils	122 mils	122 mils		
Original FP	Inverted FP	Wider hole	Gentler Profile		
Severe Streaks & Spots	Streaks & Spots	Streaks only	Streaks only		



Circular Slots in Face Plate

(instead of holes)
Eliminates Streaks and Spots

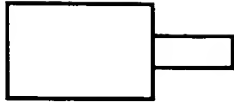
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Story in Images

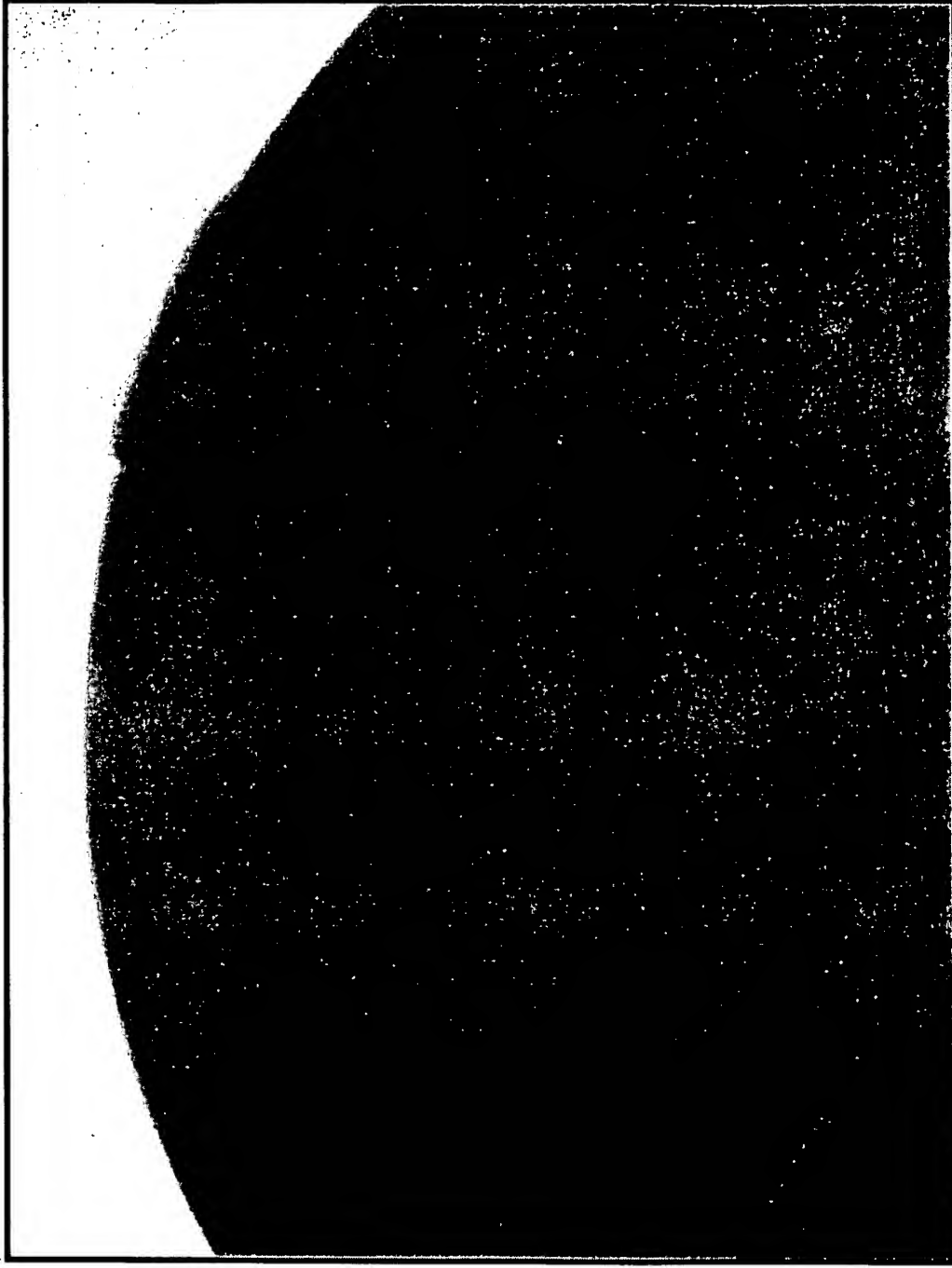
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Original Face Plate: 100 mils

62 mils



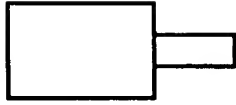
29 mils



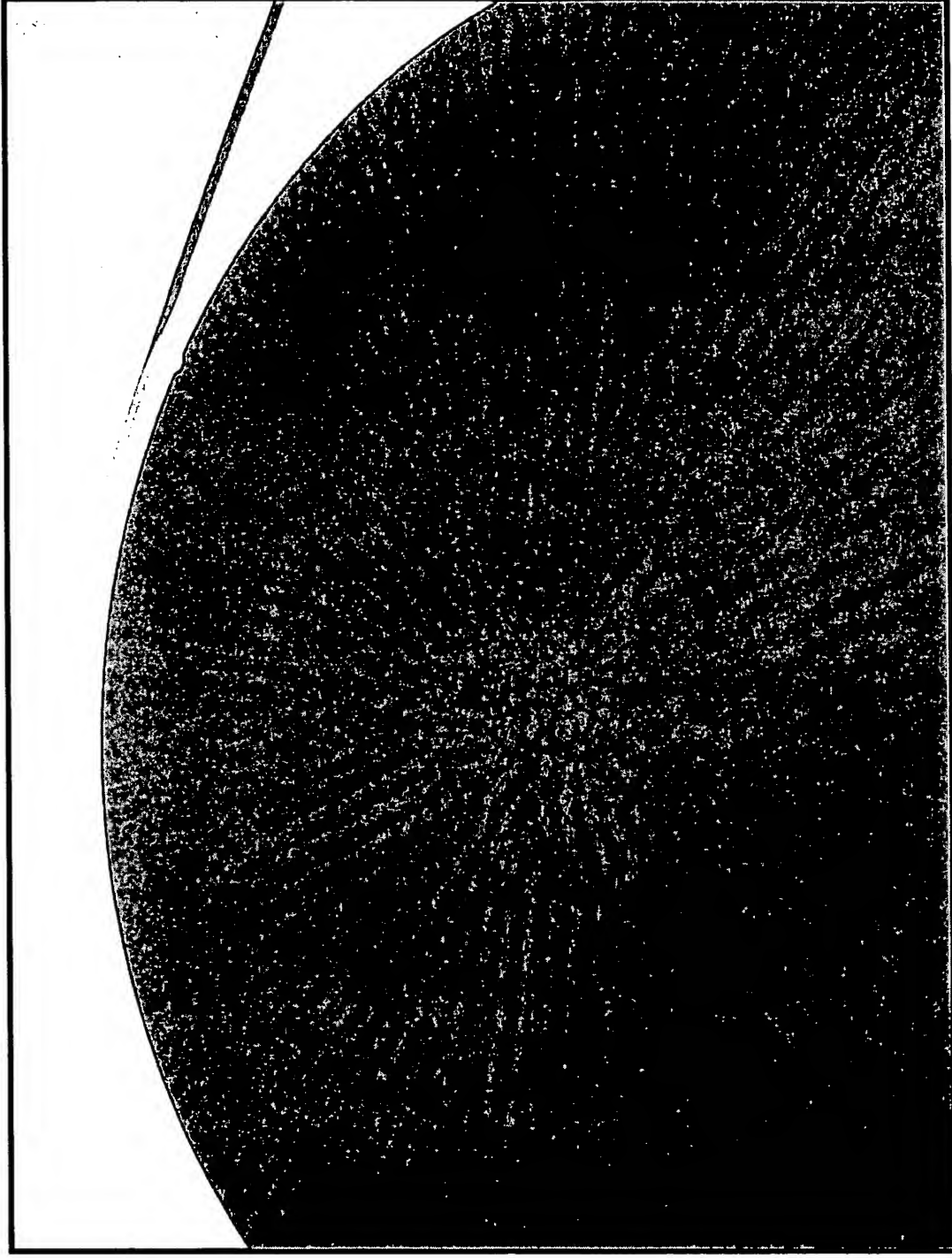
Streaks & Spots
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Original Face Plate: 75 mils

62 mils



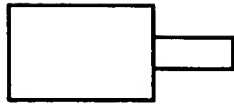
29 mils



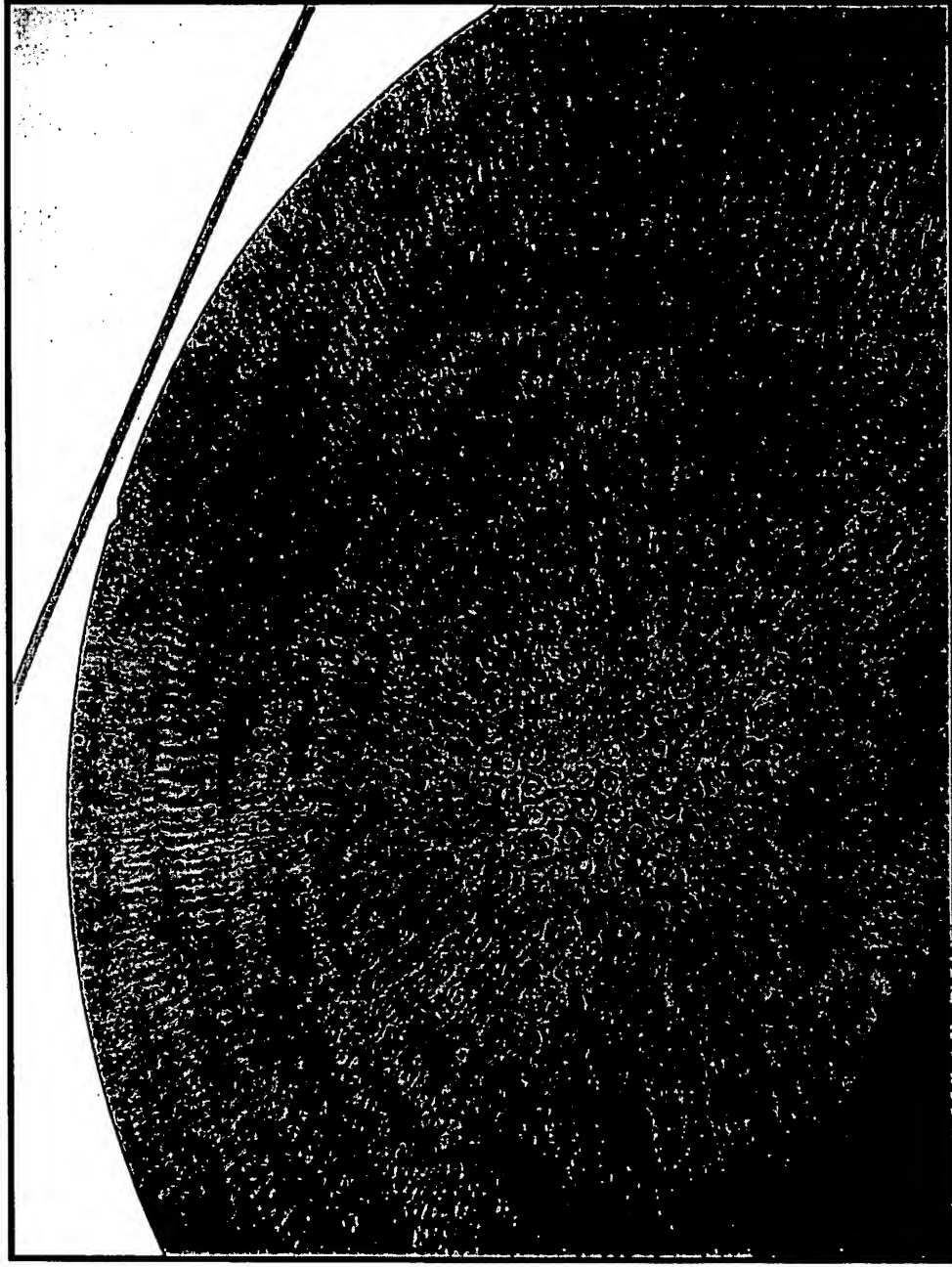
Appearance of Severe Streaks & Spots

Original Face Plate: 50 mils

62 mils



29 mils

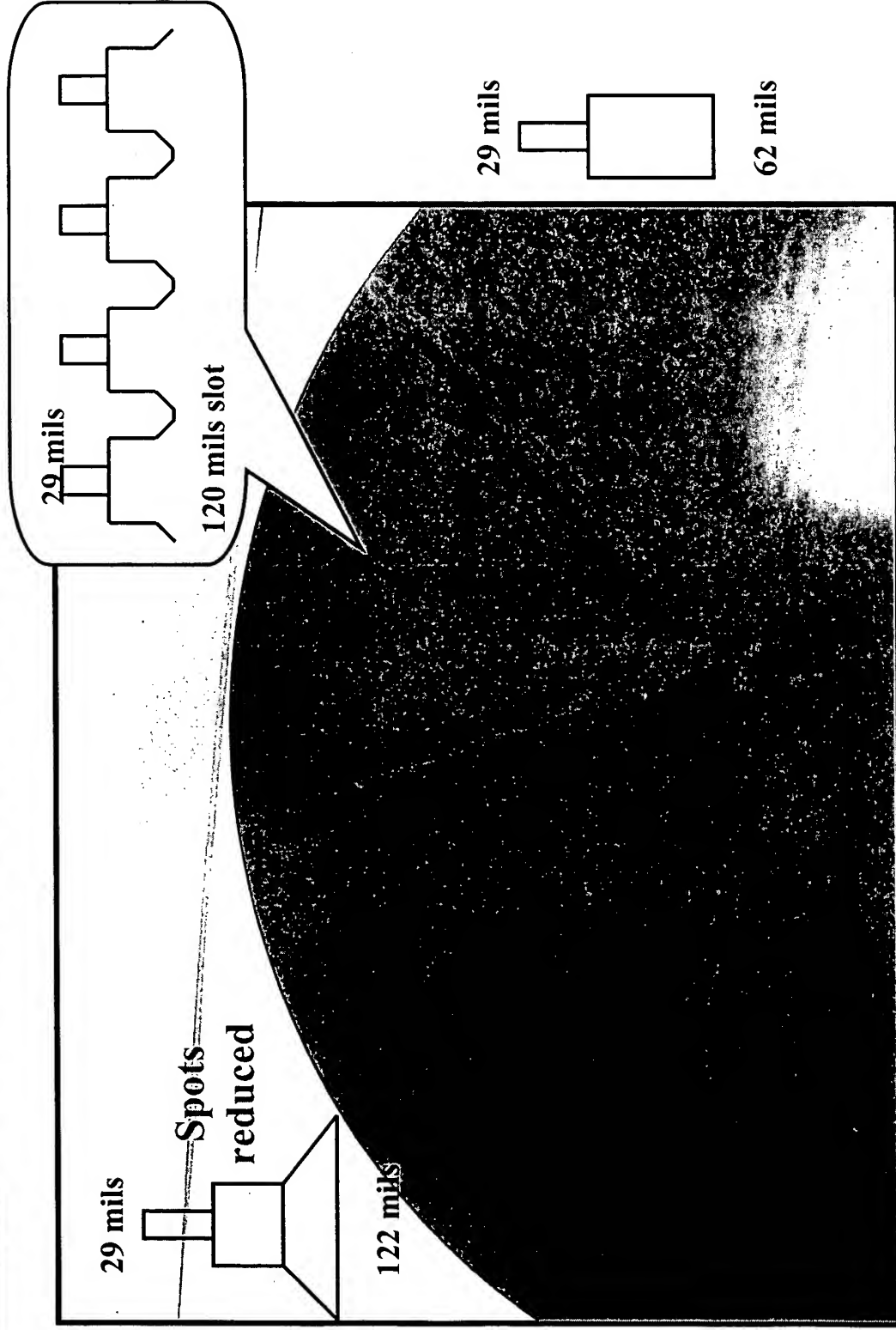


Extremely Severe Streaks & Spots

Imprint of Faceplate Hole Pattern

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Experimental Face Plate: 75 mils

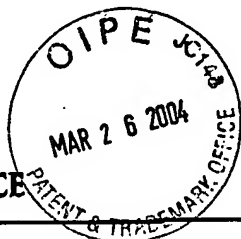


Slotted section eliminates both streaks & spots!

CONFIDENTIAL



UNITED STATES
PATENT AND
TRADEMARK OFFICE
★★★★



JULY 02, 2002

PTAS

Commissioner for Trademarks
Arlington, VA 22202-3513
www.uspto.gov

APPLIED MATERIALS, INC.
JOSEPH BACH
P.O. BOX 450-A
PATENT COUNSEL, M/S 2061
SANTA CLARA, CA 95052



102078614A

UNITED STATES PATENT AND TRADEMARK OFFICE
NOTICE OF RECORDATION OF ASSIGNMENT DOCUMENT

THE ENCLOSED DOCUMENT HAS BEEN RECORDED BY THE ASSIGNMENT DIVISION OF THE U.S. PATENT AND TRADEMARK OFFICE. A COMPLETE MICROFILM COPY IS AVAILABLE AT THE ASSIGNMENT SEARCH ROOM ON THE REEL AND FRAME NUMBER REFERENCED BELOW.

PLEASE REVIEW ALL INFORMATION CONTAINED ON THIS NOTICE. THE INFORMATION CONTAINED ON THIS RECORDATION NOTICE REFLECTS THE DATA PRESENT IN THE PATENT AND TRADEMARK ASSIGNMENT SYSTEM. IF YOU SHOULD FIND ANY ERRORS OR HAVE QUESTIONS CONCERNING THIS NOTICE, YOU MAY CONTACT THE EMPLOYEE WHOSE NAME APPEARS ON THIS NOTICE AT 703-308-9723. PLEASE SEND REQUEST FOR CORRECTION TO: U.S. PATENT AND TRADEMARK OFFICE, ASSIGNMENT DIVISION, BOX ASSIGNMENTS, CG-4, 1213 JEFFERSON DAVIS HWY, SUITE 320, WASHINGTON, D.C. 20231.

RECORDATION DATE: 04/16/2002

REEL/FRAME: 012847/0481
NUMBER OF PAGES: 19

BRIEF: ASSIGNMENT OF ASSIGNOR'S INTEREST (SEE DOCUMENT FOR DETAILS).

ASSIGNOR:
KATZ, DAN

DOC DATE: 03/11/2002

ASSIGNOR:
BUCHBERGER, JR., DOUGLAS

DOC DATE: 03/21/2002

ASSIGNOR:
YE, YAN

DOC DATE: 03/15/2002

ASSIGNOR:
HAGEN, ROBERT B

DOC DATE: 02/22/2002

ASSIGNOR:
ZHAO, XIAOYE

DOC DATE: 02/21/2002

ASSIGNOR:
KUMAR, ANANDA H

DOC DATE: 02/21/2002

ASSIGNOR:
CHIANG, KANG-LIE

DOC DATE: 02/21/2002

COMPUTER ENTERED
JUL 11 2002

012847/0481 PAGE 2

ASSIGNOR:
NOORBAKHS, HAMID

DOC DATE: 02/22/2002

ASSIGNOR:
WANG, SHIANG-BAU

DOC DATE: 03/21/2002

ASSIGNEE:
APPLIED MATERIALS, INC.
P.O. BOX 450-A
PATENT COUNSEL, M/S 2061
SANTA CLARA, CALIFORNIA 95052SERIAL NUMBER: 10027732
PATENT NUMBER:FILING DATE: 12/19/2001
ISSUE DATE:ANTHONY ROYALL, EXAMINER
ASSIGNMENT DIVISION
OFFICE OF PUBLIC RECORDS

05-06-2002



177 USA/ETCH/DRIE

FORM
(Rev. 6-93)
OMB No. 0651-0011 (exp. 4/94)

102078614

FORM COVER SHEET

U.S. Department of Commerce

Patent and Trademark Office

PATENTS ONLY

To the Honorable Commissioner of Patents and Trademarks: Please record the attached original document or copy thereof.

1. Name of conveying party(ies):

4-16-02

Date

- | | |
|----------------------------|---------|
| 1. Dan KATZ | 3-11-02 |
| 2. Douglas A BUCHBERGER Jr | 2-21-02 |
| 3. Yan YE | 3-15-02 |
| 4. Robert B HAGEN | 2-22-02 |
| 5. Xiaoye ZHAO | 2-21-02 |
| 6. Ananda H KUMAR | 2-21-02 |
| 7. Kang-Lie CHIANG | 2-21-02 |
| 8. Hamid NOORBAKHS | 2-22-02 |
| 9. Shiang-Bau WANG | 3-21-02 |

Additional name(s) of conveying party(ies) attached?

Yes ☒ No

3. Nature of conveyance:

☒ Assignment☐ Merger☐ Security Agreement☐ Change of Name☐ Other

Execution Date: SEE ABOVE

2. Name and address of receiving party(ies):

Name: APPLIED MATERIALS, INC

Internal Address: PATENT COUNSEL, M/S 2061

Street Address: P.O. Box 450-A

City: Santa Clara State: CA Zip: 95052

Additional name(s) & address(es) attached? Yes ☒ No

4. Application number(s) or registration number(s):

If this document is being filed together with a new application, the execution date of the application serial 10/027,732 FILED 12/19/2001

A. Patent Application No.(s)

B. Patent No.(s)

Additional numbers attached? Yes ☒ No

5. Name and address of party to whom correspondence concerning document should be mailed:

Name: APPLIED MATERIALS, INC

Internal Address: PATENT COUNSEL, M/S 2061

Street Address: P.O. Box 450-A

City: Santa Clara State: CA Zip: 95052

6. Total number of applications and patents involved: 1

7. Total fee (37 C.F.R. 3.41) \$ 40.00

☐ Enclosed☒ Authorized to be charged to deposit account

50-1074

8. Deposit account number:

50-1074

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9. Statement and signature:

To the best of my knowledge and belief, the foregoing information is true and correct and any attached copy is a true copy of the original document.

Joseph Bach Registration No. 37, 771

Name of Person Signing

Signature

DATE

4-9-02

Total number of pages including cover sheet, attachments and document: 12

Mail documents to be recorded with required cover sheet information to:
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Washington, D.C. 20231

05/03/2002 TDI A21 00000067 501074 10027732

01 FC:581

40.00 CH

Case #6177

ASSIGNMENT FOR APPLICATION FOR PATENT**WHEREAS:**

Names and Addresses
of Inventors:

1. Dan Katz
2. Douglas A. Buchberger, Jr.
3. Yan Ye
4. Robert B. Hagen
5. Xiaoye Zhao
6. Ananda H. Kumar
7. Kang-Lie Chiang
8. Hamid Noorbakhsh
9. Shiang-Bau Wang

(hereinafter referred to as Assignors), have invented a certain invention entitled:

"GAS DISTRIBUTION PLATE ELECTRODE FOR A PLASMA REACTOR "

for which application for Letters Patent in the United States was filed on 12/19/2001 under 10/027,732 executed on even date herewith; and

WHEREAS, Applied Materials, Inc., a corporation of the State of Delaware, having a place of business at 3050 Bowers Avenue, Santa Clara, California 95054 (hereinafter referred to as Assignee), is desirous of acquiring the entire right, title and interest in and to said application (hereinafter referred to as Application), and the invention disclosed therein (hereinafter referred to as Invention), and in and to all embodiments of the Invention, heretofore conceived, made or discovered by said Assignors, and in and to any and all patents, inventor's certificates and other forms of protection (hereinafter referred to as Patents) thereon granted in any and all countries and groups of countries.

NOW, THEREFORE, in consideration of good and valuable consideration acknowledged by said Assignors to have been received in full from said Assignee:

1. Said Assignors hereby sell, assign, transfer and convey to Assignee the full and exclusive right, title and interest (a) in and to said Application and said Invention; (b) in and to all rights to apply for patents on said Invention in any and all countries pursuant to the International Convention for the Protection of Industrial Property or otherwise; (c) in and to any and all Applications filed and any and all Patents granted on said Invention in any and all countries and groups of countries, including each and every Application filed and each and every Patent granted on any application which is a division, substitution, or continuation of said Application; and (d) in and to each and every reissue or extension of any of said Patents.

2. Said Assignors hereby covenant and agree to cooperate with said Assignee to enable said Assignee to enjoy to the fullest extent the right, title and interest to said Invention herein conveyed in any and all countries and groups of countries. Such cooperation by said Assignors shall include prompt production of pertinent facts and documents, giving testimony, execution of petitions, oaths, specifications, declarations or other papers, and other assistance all to the extent deemed necessary or desirable by said Assignee (a) for perfecting in said Assignee the right, title and interest herein conveyed; (b) for

prosecuting any of said applications; (c) for filing and prosecuting substitute, divisional, continuing or additional applications covering said invention; (d) for filing and prosecuting applications for reissuance of any of said Patents; (e) for interference or other priority proceedings involving said invention; and (f) for legal proceedings involving said invention and any application therefor and any Patents granted thereon, including without limitation opposition proceedings, cancellation proceedings, priority contests, public use proceedings, infringement actions and court actions; provided, however, that the expense incurred by said Assignors in providing such cooperation shall be paid for by said Assignee.

3. The term and covenants of this agreement shall inure to the benefit of said Assignee, its successors, assigns and other legal representatives, and shall be binding upon said Assignors, their respective heirs, legal representatives and assigns.

4. Said Assignors hereby warrant and represent that they have not entered and will not enter into any assignment, contract, or understanding in conflict herewith.

IN WITNESS WHEREOF, the said Assignors have executed and delivered this instrument to said Assignee on the dates indicated below.


- 1) 3/11, 2002 D. Katz
Dan Katz
- 2) _____, 2002 _____
Douglas A. Buchberger, Jr.
- 3) _____, 2002 _____
Yan Ye
- 4) _____, 2002 _____
Robert B. Hagen
- 5) _____, 2002 _____
Xiaoye Zhao
- 6) _____, 2002 _____
Ananda H. Kumar
- 7) _____, 2002 _____
Kang-Lie Chiang
- 8) _____, 2002 _____
Hamid Noorbakhsh
- 9) _____, 2002 _____
Shiang-Bau Wang

prosecuting any of said applications; (c) for filing and prosecuting substitute, divisional, continuing or additional applications covering said Invention; (d) for filing and prosecuting applications for reissuance of any of said Patents; (e) for interference or other priority proceedings involving said Invention; and (f) for legal proceedings involving said Invention and any application therefor and any Patents granted thereon, including without limitation opposition proceedings, cancellation proceedings, priority contests, public use proceedings, infringement actions and court actions; provided, however, that the expense incurred by said Assignors in providing such cooperation shall be paid for by said Assignee.

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IN WITNESS WHEREOF, the said Assignors have executed and delivered this instrument to said Assignee on the dates indicated below.

- 1) _____, 2002 _____
Dan Katz
- 2) Feb 21, 2002 
Douglas A. Buchberger, Jr.
- 3) _____, 2002 _____
Yan Ye
- 4) _____, 2002 _____
Robert B. Hagen
- 5) _____, 2002 _____
Xiaoye Zhao
- 6) _____, 2002 _____
Ananda H. Kumar
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Kang-Lie Chiang
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Shiang-Bau Wang

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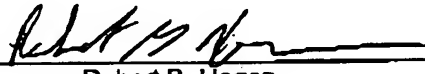
- 1) _____, 2002 _____
Dan Katz
- 2) _____, 2002 _____
Douglas A. Buchberger, Jr.
- 3) 3-15, 2002 _____
Yan Ye
- 4) _____, 2002 _____
Robert B. Hagen
- 5) _____, 2002 _____
Xiaoye Zhao
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Ananda H. Kumar
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- 8) _____, 2002 _____
Hamid Noorbakhsh
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Shiang-Bau Wang

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- 9) _____, 2002 _____
Shiang-Bau Wang

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Xiaoye Zhao

6) Feb 21, 2002 Ananda H. Kumar
Ananda H. Kumar

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Shiang-Bau Wang

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6) _____, 2002 _____
Ananda H. Kumar

7) 2/21, 2002 
Kang-Lie Chiang

8) _____, 2002 _____
Hamid Noorbakhsh

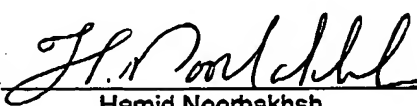
9) _____, 2002 _____
Shiang-Bau Wang

prosecuting any of said applications; (c) for filing and prosecuting substitute, divisional, continuing or additional applications covering said Invention; (d) for filing and prosecuting applications for reissuance of any of said Patents; (e) for interference or other priority proceedings involving said Invention; and (f) for legal proceedings involving said Invention and any application therefor and any Patents granted thereon, including without limitation opposition proceedings, cancellation proceedings, priority contests, public use proceedings, infringement actions and court actions; provided, however, that the expense incurred by said Assignors in providing such cooperation shall be paid for by said Assignee.

3. The term and covenants of this agreement shall inure to the benefit of said Assignee, its successors, assigns and other legal representatives, and shall be binding upon said Assignors, their respective heirs, legal representatives and assigns.

4. Said Assignors hereby warrant and represent that they have not entered and will not enter into any assignment, contract, or understanding in conflict herewith.

IN WITNESS WHEREOF, the said Assignors have executed and delivered this instrument to said Assignee on the dates indicated below.

- 1) _____, 2002 _____
Dan Katz
- 2) _____, 2002 _____
Douglas A. Buchberger, Jr.
- 3) _____, 2002 _____
Yan Ye
- 4) _____, 2002 _____
Robert B. Hagen
- 5) _____, 2002 _____
Xiaoye Zhao
- 6) _____, 2002 _____
Ananda H. Kumar
- 7) _____, 2002 _____
Kang-Lie Chiang
- 8) Feb. 22, 2002 
Hamid Noorbakhsh
- 9) _____, 2002 _____
Shiang-Bau Wang

prosecuting any of said applications; (c) for filing and prosecuting substitute, divisional, continuing or additional applications covering said Invention; (d) for filing and prosecuting applications for reissuance of any of said Patents; (e) for interference or other priority proceedings involving said Invention; and (f) for legal proceedings involving said Invention and any application therefor and any Patents granted thereon, including without limitation opposition proceedings, cancellation proceedings, priority contests, public use proceedings, infringement actions and court actions; provided, however, that the expense incurred by said Assignors in providing such cooperation shall be paid for by said Assignee.

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- 7) _____, 2002 _____
Kang-Lie Chiang
- 8) _____, 2002 _____
Hamid Noorbakhsh
- 9) 3/21, 2002 Shiang-Bau Wang
Shiang-Bau Wang